

16

GROUND ACCIDENT

REPORT

14 AUGUST 1972

FOR
IDEALIST OPS

USAF ACCIDENT/INCIDENT REPORT

(Fill in all spaces applicable. If additional space is needed, use additional sheet(s).)

[illegible]

GROUND ACCIDENT REPORT

Complete all blocks as applicable; attach additional sheets if required

1. FUNCTIONAL AREA Rear of P.E. trailer		2. WEATHER AND VISIBILITY AT ACCIDENT SITE Clear		3. TYPE, CONDITION OF ROAD OR OTHER SURFACES (Specify) N/A	
4. UNSAFE CONDITIONS CONTRIBUTING TO THIS MISHAP Improper clothing contributed to injuries sustained					
5. PERSON REPORTED NO.					
a. Name, Grade, Serial Number [REDACTED]		b. Assigned Organization (Base, Command) [REDACTED]		c. Aero Rating N/A	
d. Primary AFSC 92270B	e. Duty Asgmt. P.E. Tech	f. Status ON DUTY (ON BASE) <input checked="" type="checkbox"/> ON DUTY (OFF BASE) <input type="checkbox"/> OFF DUTY (ON BASE) <input type="checkbox"/> OFF DUTY (OFF BASE) <input type="checkbox"/> 3 DAY PASS <input type="checkbox"/> LV/FURLOUGH <input type="checkbox"/>		g. Pre-existing Phys. Limitations N/A	
h. Sex M	i. Age 32	j. Years of Educ. N/A	k. Activity at Time of Accident Charging oxygen btl in seat kit	l. Describe Unsafe Act and/or Unsafe Personal Factor, Including Violations (Continue under Remarks, if more space required)	
m. Injury (Nature and location, non-medical terms preferred) 1st & 2nd degree burns on face, arms and legs			n. Disability Classification None <input type="checkbox"/> Perm. Partial <input type="checkbox"/> Fatal <input type="checkbox"/> Temp. Total <input checked="" type="checkbox"/> Perm. Total <input type="checkbox"/> Missing <input type="checkbox"/>		o. Days Lost (Est.) 40
p. Position in Vehicle N/A	q. Thrown from Vehicle Yes <input type="checkbox"/> No <input type="checkbox"/>	r. Speed (MPH) Legal <input type="checkbox"/> Est. <input type="checkbox"/>	s. Safety Belts Installed: Yes <input type="checkbox"/> No <input type="checkbox"/> Used: Yes <input type="checkbox"/> No <input type="checkbox"/>	t. Valid Permit State: Yes <input type="checkbox"/> No <input type="checkbox"/> USAF: Yes <input type="checkbox"/> No <input type="checkbox"/>	u. Fire Yes <input type="checkbox"/> No <input type="checkbox"/>
v. Occupants in Vehicle Front <input type="checkbox"/> Back <input type="checkbox"/>	w. Driver Violation Yes <input type="checkbox"/> No <input type="checkbox"/>		x. Violation/Accident Recorded on AF Form 1313 <input type="checkbox"/> Date <input type="checkbox"/>		y. Number Moving Violations/Accidents Past Three (3) Years (Describe each in item 11, AF Form 711) N/A
z. Type of Driver Training N/A					
6. PROPERTY DAMAGE					
VEHICLE NO. 1					
a. Vehicle: Motor <input type="checkbox"/> Spec. Purpose <input type="checkbox"/>	b. Owner (Major command or non-USAF) N/A		c. Year	d. Make	e. No. Doors (Body type)
f. Describe Vehicle Damage N/A			g. Repair Cost (Est.)		h. Days Out of Service (Est.)
VEHICLE NO. 2					
a. Vehicle: Motor <input type="checkbox"/> Spec. Purpose <input type="checkbox"/>	b. Owner (Major command or non-USAF) N/A		c. Year	d. Make	e. No. Doors (Body type)
f. Describe Vehicle Damage N/A			g. Repair Cost (Est.)		h. Days Out of Service (Est.)
7. USAF AIRCRAFT OR GUIDED MISSILE					
a. Type, Model, Series	b. Owner (Major command)		c. Assigned Base		
d. Describe Damage N/A	e. Repair Cost (Est.)		f. Days Out of Service (Est.)		
8. OTHER USAF PROPERTY DAMAGE					
a. Type of Property Damaged Oxygen btl system	b. Repair/Replacement Cost	c. Type of Property Damaged Oxygen shed adjacent to P.E. trailer	d. Repair/Replacement Cost		
9. NON-USAF INJURIES AND PROPERTY DAMAGE					
a. No. Disabling Injuries FATAL <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>	b. Property Damage (Type and extent) 1 none				
10. RECOMMENDATIONS OF GROUND SAFETY DIRECTOR					
SIGNATURE AND GRADE					
DATE					

Approved For Release 2001/11/16 : CIA-RDP74B00836R000300160001-0

11.

SPECIFIC ACTION TAKEN BY SUPERVISOR

Approved For Release 2001/11/16 : CIA-RDP74B00836R000300160001-0

SIGNATURE AND GRADE

DATE

12.

COMMENTS OF ORGANIZATION COMMANDER

SIGNATURE AND GRADE

DATE

REMARKS (Use this space for additional information; identify the items)

GROUND ACCIDENT REPORT

Complete all blocks as applicable; attach additional sheets if required

1. FUNCTIONAL AREA Rear of P.E. trailer		2. WEATHER AND VISIBILITY AT ACCIDENT SITE Clear		3. TYPE, CONDITION OF ROAD OR OTHER SURFACES (Specify) N/A							
4. UNSAFE CONDITIONS CONTRIBUTING TO THIS MISHAP Improper clothing contributed to injuries sustained											
5. PERSON REPORTED NO.											
a. Name, Grade, Serial Number [REDACTED]			b. Assigned Organization (Base, Command) [REDACTED]		c. Aero Rating N/A						
d. Primary AFSC 92270B		e. Duty Station P.E. Tech		f. Status <table border="1"> <tr> <td><input checked="" type="checkbox"/> ON DUTY (ON BASE)</td> <td><input type="checkbox"/> ON DUTY (OFF BASE)</td> <td><input type="checkbox"/> 3 DAY PASS</td> </tr> <tr> <td><input type="checkbox"/> OFF DUTY (ON BASE)</td> <td><input type="checkbox"/> OFF DUTY (OFF BASE)</td> <td><input type="checkbox"/> LV/FURLOUGH</td> </tr> </table>		<input checked="" type="checkbox"/> ON DUTY (ON BASE)	<input type="checkbox"/> ON DUTY (OFF BASE)	<input type="checkbox"/> 3 DAY PASS	<input type="checkbox"/> OFF DUTY (ON BASE)	<input type="checkbox"/> OFF DUTY (OFF BASE)	<input type="checkbox"/> LV/FURLOUGH
<input checked="" type="checkbox"/> ON DUTY (ON BASE)	<input type="checkbox"/> ON DUTY (OFF BASE)	<input type="checkbox"/> 3 DAY PASS									
<input type="checkbox"/> OFF DUTY (ON BASE)	<input type="checkbox"/> OFF DUTY (OFF BASE)	<input type="checkbox"/> LV/FURLOUGH									
g. Pre-existing Phys. Limitations N/A	h. Sex M										
i. Age 45	j. Years of Educ. N/A	k. Activity at Time of Accident Charging oxygen btl in seat kit		l. Describe Unsafe Act and/or Unsafe Personal Factor, Including Violations (Continue under Remarks, if more space required) N/A							
m. Injury (Nature and location, non-medical terms preferred) 1st & 2nd degree burns on face & legs. 3rd degree burn on arm			n. Disability Classification None _____ Perm. Partial _____ Fatal _____ Temp. Total <input checked="" type="checkbox"/> Perm. Total _____ Missing _____		o. Days Lost (Est.) 40						
p. Position in Vehicle N/A	q. Thrown from Vehicle Yes _____ No _____	r. Speed (MPH) Legal _____ Est. _____	s. Safety Belts Installed: Yes _____ No _____ Used: Yes _____ No _____	t. Valid Permit State: Yes _____ No _____ USAF: Yes _____ No _____	u. Fire Yes _____ No _____						
v. Occupants in Vehicle Front _____ Back _____		w. Driver Violation Yes _____ No _____		x. Violation/Accident Recorded on AF Form 1313 _____ Date _____							
y. Number Moving Violations/Accidents Past Three (3) Years (Describe each in item 11, AF Form 711) N/A		z. Type of Driver Training N/A									
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VEHICLE NO. 1											
a. Vehicle: Motor _____ Spec. Purpose _____		b. Owner (Major command or non-USAF) N/A		c. Year	d. Make						
e. No. Doors (Body type)		f. Describe Vehicle Damage N/A		g. Repair Cost (Est.)	h. Days Out of Service (Est.)						
VEHICLE NO. 2											
a. Vehicle: Motor _____ Spec. Purpose _____		b. Owner (Major command or non-USAF) N/A		c. Year	d. Make						
e. No. Doors (Body type)		f. Describe Vehicle Damage N/A		g. Repair Cost (Est.)	h. Days Out of Service (Est.)						
7. USAF AIRCRAFT OR GUIDED MISSILE											
a. Type, Model, Series		b. Owner (Major command)		c. Assigned Base							
d. Describe Damage N/A		e. Repair Cost (Est.)		f. Days Out of Service (Est.)							
8. OTHER USAF PROPERTY DAMAGE											
a. Type of Property Damaged Oxygen btl system		b. Repair/Replacement Cost		c. Type of Property Damaged Oxygen shed adjacent to P.E. trailer							
d. Repair/Replacement Cost											
9. NON-USAF INJURIES AND PROPERTY DAMAGE											
a. No. Disabling Injuries FATAL _____ OTHER _____		b. Property Damage (Type and extent) none									
10. RECOMMENDATIONS OF GROUND SAFETY DIRECTOR											
SIGNATURE AND GRADE											
DATE											

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REMARKS (Use this space for additional information; identify the items)

REPORT OF INVESTIGATION OF OXYGEN GROUND ACCIDENT, [REDACTED]

At 0820L on 14 Aug 1972 an oxygen filter (FSN 4440-651-7012) exploded resulting in personnel injury and equipment damage. Equipment used was standard USAF high pressure servicing components and oxygen cylinders. At the time of the accident three oxygen cylinders (10 bottle pallet) were connected to the servicing manifold which in turn directs oxygen flow through the filter to the servicing outlets in the P.E. trailer. Normally one cylinder is open to the manifold, although it is permissible to have three if required. Purpose of the servicing equipment is to afford high and low pressure oxygen for pilot pre-breathing, Life Support equipment, maintenance and servicing of bail-out bottle in pilots seat kit. Servicing components were located adjacent to the P.E. trailer in a metal shed. Unit and associated plumbing was installed in May 1971 by assigned technicians. Operating and servicing of the equipment is performed solely by the P.E. techs. Periodic testing for purity is accomplished by LAC oxygen specialist.

The oxygen cylinders had been replaced on 11 Aug and a new filter was installed. Pressure readings observed on the three connected bottles were 1700, 1750 and 1800 PSI. A manifold valve to the bottle containing 1800 PSI was opened and remained on during the period 11-14 Aug for the high pressure servicing of a bailout bottle. On 14 Aug the P.E. techs entered the oxygen shed to select another cylinder with a high pressure for servicing a bailout bottle. [REDACTED] had removed a servicing line from a cylinder and attached it to a fully serviced bottle. When opening the manifold mounted valve from the line servicing the cylinder, pressure was noted to be 1700PSI. Shortly thereafter the filter was observed to be emitting smoke, immediately thereafter an explosion and fire resulted.

FINDINGS:

1. An approximate four inch section of the filter chamber blew out from an apparent fire within the chamber.
2. Oxygen sample taken on 14 Aug was satisfactory. Although the sample was not taken from the specific bottle in question, it is a representative sample from same batch.
3. The P.E. tech failed to remove the protective tape from the outlet ports on the filter cartridge prior to insertion into the filter container.
4. P.E. techs sustained first and second degree burns on exposed skin surface due to their abbreviated attire of shorts and short sleeve shirts.

Attachment 1

Initial installation check on Personal Equipment panel.

CRYOGENIC MATERIALS DATA REPORT OR DESTROY REPORT				ITEM TO BE TESTED	
CRYOGENIC MATERIALS DATA REPORT OR DESTROY REPORT - RDP74B00836R000300160001-0					
LAB SAMPLE NO 71-160	DATE RECEIVED IN LAB 13 May 71	SAMPLER PRESSURE, PSI 500	SAMPLER NO Ser. 4	SPECIFICATION NO MIL-9-27210D	
SUBMITTED BY (Organization, Name Address Phone No) [REDACTED] STATINTL			REASON FOR ANALYSIS OF SAMPLE <input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> RESAMPLE <input type="checkbox"/> PREPRODUCTION <input type="checkbox"/> OTHER (List)		
PROCUREMENT			BASE		STORAGE
CONTRACTOR			STORAGE TANK NO P.E. PANEL #1		QUANTITY REPRESENTED 2260 PSI BTL
LOCATION OF FACILITY			QUANTITY OF LAST ADDITION		DATE OF LAST ADDITION
CONTRACT NO			CONTRACT NO NA		DATE OF LAST PURGING 4 May 71
DATE SAMPLED			SUPPLIER LOX PLANT (C)		
SAMPLE NO			BASE SAMPLE NO 0-71-15		DATE SAMPLED 4 May 71
PRESSURE OF SAMPLER SUBMITTED			PRESSURE OF SAMPLER SUBMITTED 430 PSI		
TEST RESULTS					
PURITY % VOLUME	99.75	C2+ HYDROCARBONS (Ethane Equivalent) PPM		.86	
MOISTURE (mg/liter) or (ppm)		NITROUS OXIDE PPM		0	
ODOR	None	HALOGENATED COMPOUNDS	REFRIGERANTS (Freon etc) PPM	0	
CARBON DIOXIDE PPM	Trace		SOLVENTS (Trichloroethylene etc) PPM	0	
METHANE PPM	16	OTHER CONSTITUENT (Except Inert Gases) PPM			
ACETYLENE PPM	0	TOTAL HYDROCARBONS (By Weight As Carbon) PPM			
ETHYLENE PPM		PARTICULATE (mg/liter)			
REMARKS					
Personal equipment panel, first time use at this station. Notified [REDACTED] 1500 hrs, 13 May 71. Product represented by this sample is satisfactory for use IAW T.O. 42B6-1-1.					
REPORTED BY (Signature, Date, Organization Code)			APPROVED BY (Signature, Date, Organization Code)		
			Donald E. Leedle DONALD E. LEEDLE, CAPT, USAF Chief, PACAF Oxygen/Fuels Lab		

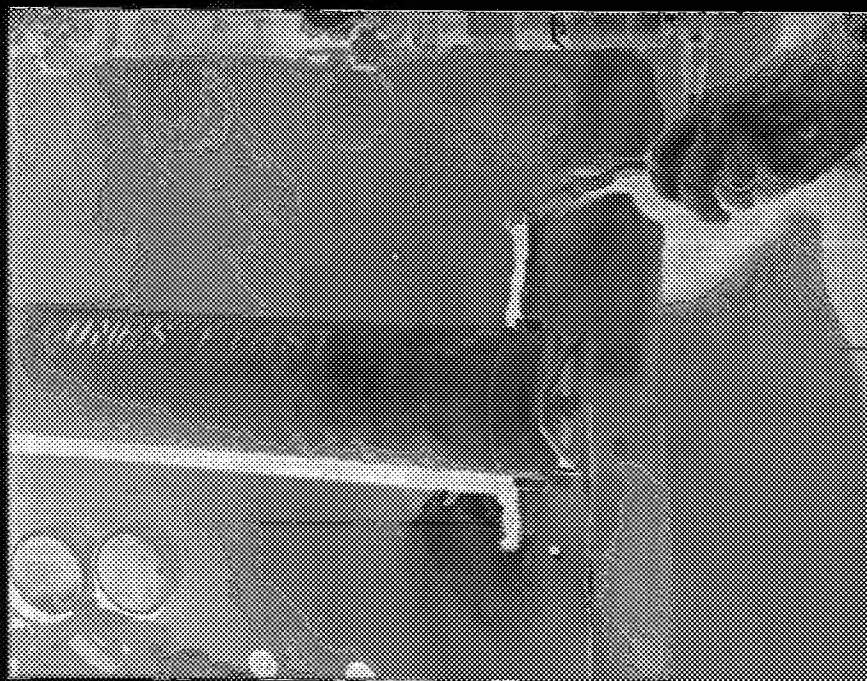
Attachment 2

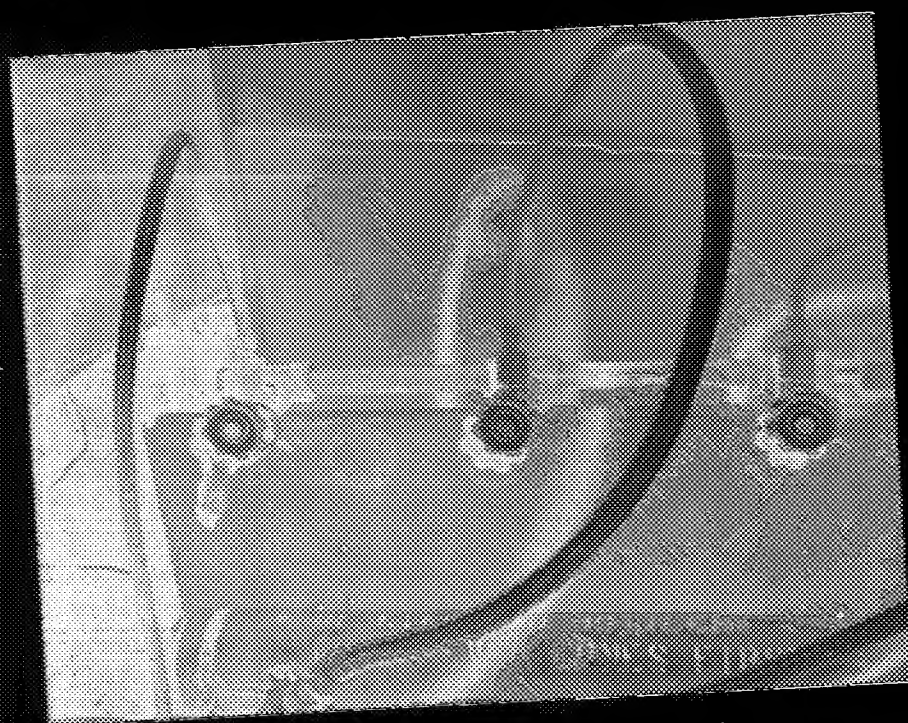
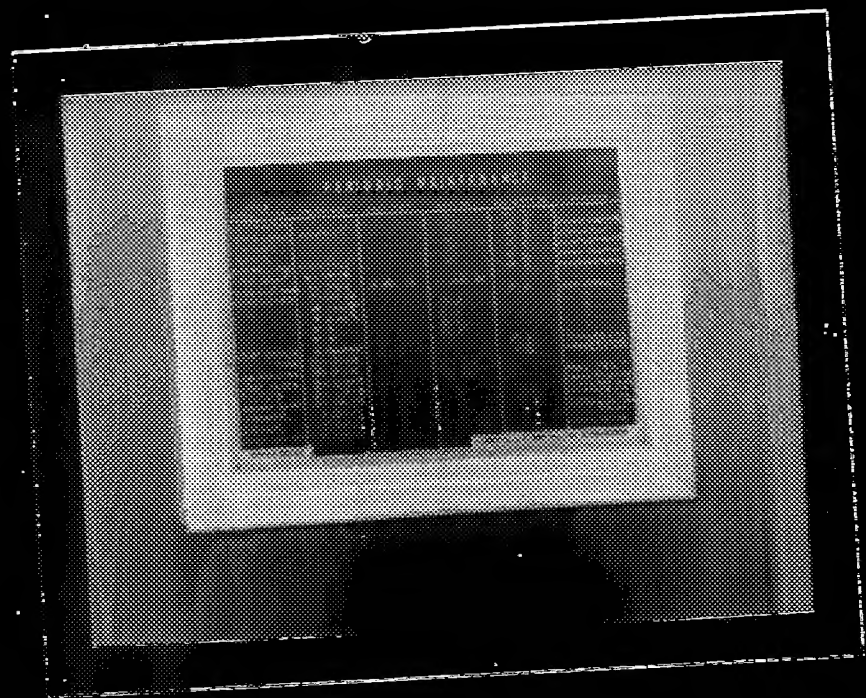
Sample taken prior to accident.

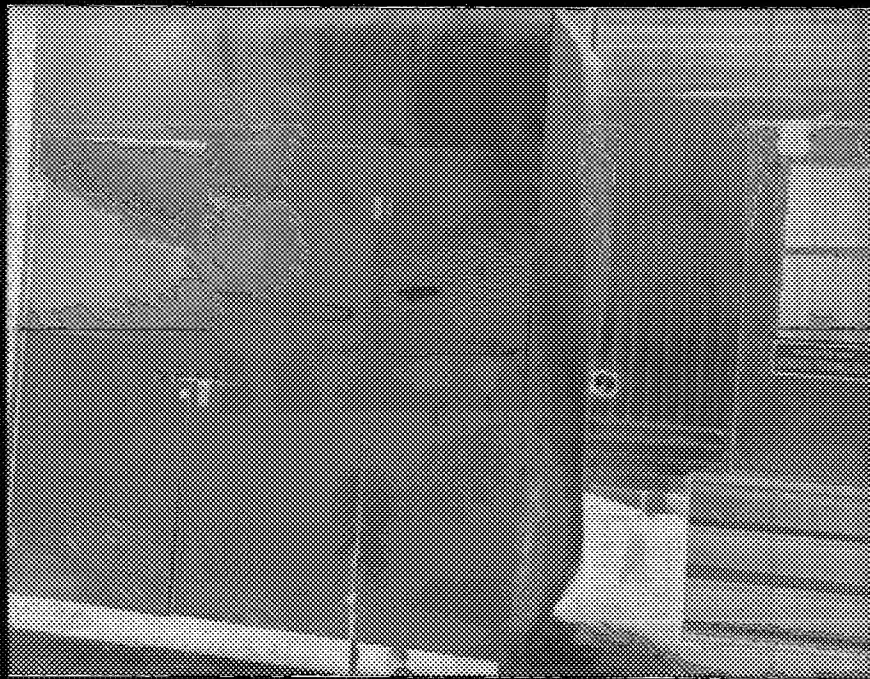
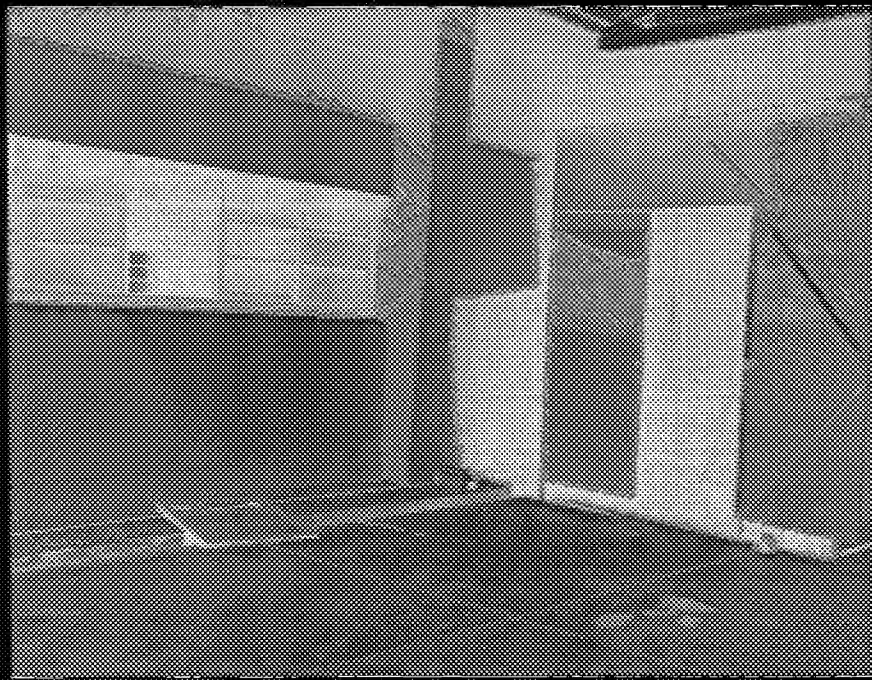
ILLEGIB

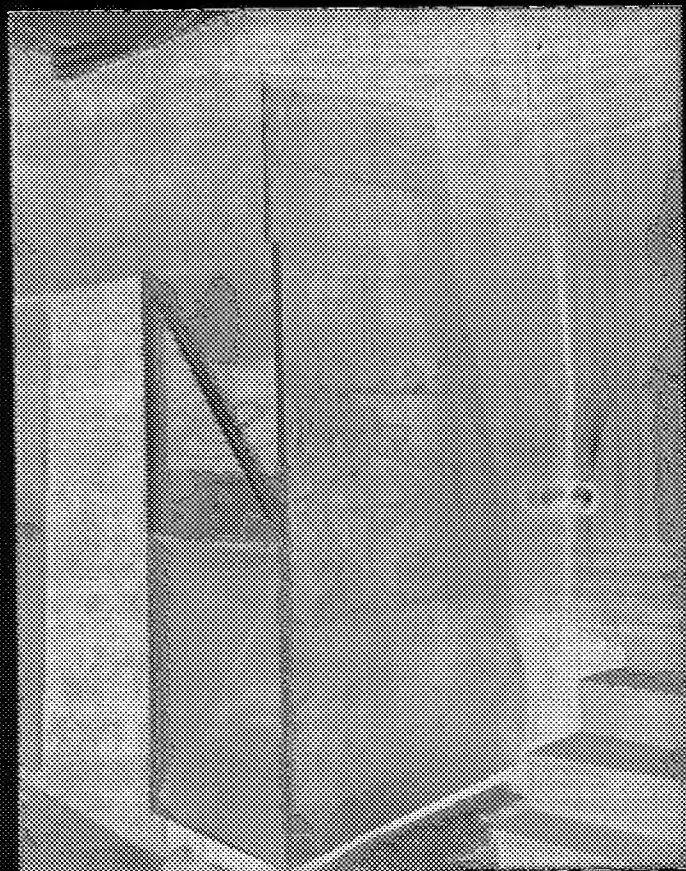
Attachment 3

Photos taken subsequent to explosion.









Attachment 4

Statements.

STATEMENT

25X1A I, [REDACTED] talked to both [REDACTED] the evening of 25X1A
14 August 1972 and they both seemed to think that there was something 25X1A
other than oxygen in the bottle in question. [REDACTED] stated that [REDACTED] 25X1A
made sure that there was no foreign matter in the valve of the bottle,
by turning the valve on and blowing it out prior to connecting the
25X1A line. [REDACTED] then connected the line and turned on the bottle, there
was 1100 lbs of pressure on the line prior to turning on the new
bottle, when the new bottle was turned on the pressure went to 1700
25X1A lbs. [REDACTED] then told [REDACTED] that there was not enough pressure to
service the cylinders in the survival kit, at that time [REDACTED] told 25X1A
25X1A [REDACTED] that something was wrong because the filter was smoking. [REDACTED]
looked down and saw the smoke and told [REDACTED] that it was only cold 25X1A
causing it to smoke, then immediately he realized that gaseous oxy- 25X1A
gen dosen't get cold under pressure and he started to say, "[REDACTED] lets
get out of here ", when he got the words " lets get ", out of his 25X1A
mouth the filter blew. This all took place in a matter of seconds
after the bottle was turned on. [REDACTED]

STATEMENT

On 14 Aug 1972 I was servicing a survival kit and the present oxygen supply was 1100 PSI. I needed approximately 2000PSI , so and I went to the oxygen source to turn on a new bottle. disconnected one of the three low bottles, and purged the new bottle prior to connecting supply line to it.

After the line was connected and the valve was opened by what looked like condensation vapor was coming from the filter. We both immediately realized the oxygen was going the wrong direction for a freeze up and that it could only be excessive heat causing the smoke.

I started to tell "Lets get out" but the filter blew before I could finish. I remember the pressure gauge going to 1700 PSI before the explosion. This all took place in a matter of 5 seconds after the new bottle was turned on.

25X1C

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Attachment 5

Sample of oxygen from the batch in question prior to accident.

LAB SAMPLE NO 72-228	DATE RECEIVED IN LAB 20 Jul 72	SAMPLER PRESSURE, PSI	SAMPLER NO 302-115	SPECIFICATION NO
SUBMITTED BY (Organization, Name Address Phone No) [REDACTED] STATINTL		REASON FOR ANALYSIS OF SAMPLE <input checked="" type="checkbox"/> PERIODIC <input type="checkbox"/> RESAMPLE <input type="checkbox"/> PREPRODUCTION <input type="checkbox"/> OTHER (List)		
PROCUREMENT		BASE		STORAGE
CONTRACTOR		STORAGE TANK NO Little 302-115		QUANTITY REPRESENTED 2260 PSI Bottle
LOCATION OF FACILITY		QUANTITY OF LAST ADDITION		DATE OF LAST ADDITION 27 Jul 72
CONTRACT NO		CONTRACT NO NA		DATE OF LAST PURGING
DATE SAMPLED		SUPPLIER Low Pressure (7)		
SAMPLE NO		BASE SAMPLE NO 0-72-15		DATE SAMPLED 20 Jul 72
PRESSURE OF SAMPLER SUBMITTED		PRESSURE OF SAMPLER SUBMITTED 425 PSI		

TEST RESULTS

PURITY % VOLUME	99.7	C2 + HYDROCARBONS (Ethane Equivalent) PPM	0
MOISTURE (mg/liter) or (ppm)		NITROUS OXIDE PPM	0
ODOR	None	HALOGENATED COMPOUNDS	0
CARBON DIOXIDE PPM	.73	REFRIGERANTS (Freon, etc) PPM	0
METHANE PPM	13	SOLVENTS (Trichloroethylene, etc) PPM	0
ACETYLENE PPM	0	OTHER CONSTITUENT (Except Inert Gases) PPM	0
ETHYLENE PPM	0	TOTAL HYDROCARBONS (By Weight As Cation) PPM	
		PARTICULATE (mg/liter)	

REMARKS

Product represented by this sample is satisfactory for use YAW T.O. 4286-1-1.

REPORTED BY (Signature, Date, Organization Code)

APPROVED BY (Signature, Date, Organizational Code)

Donald E. Little
DONALD E. LITTLE, CPT, USAF
Chief PACAF Oxygen/Fuels Lab

SAAMA FORM 215
AUG 68

PREVIOUS EDITIONS WILL BE USED.

APPROVED BY 68, 21, 600

Attachment 6

Samples taken from four (4) separate bottles after accident.

ILLEGIB

Attachment 7

Copy of Hydrostatic testing of cylinders in use at time of accident.

Approved For Release 2001/11/16 : CIA-RDP74B00836R000300160001-0

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Attachment 8

Lab analysis of cylinders sent to WPAFB subsequent to accident.

CRYOGENIC MATERIALS LABORATORY TEST REPORT				ITEM TO BE TESTED (Include Type)	
Approved For Release 2001/11/16 : CIA-RDP74B00836R000300160001-0				Oxygen, Type I	
LAB SAMPLE NO	DATE RECEIVED IN LAB	SAMPLER PRESSURE, PSI	SAMPLER NO	SPECIFICATION NO	
72-766-0	20 Sep 72	1700	AF313410	M11-0-27210D	
SUBMITTED BY (Organization, Name Address Phone No)			REASON FOR ANALYSIS OF SAMPLE		
[REDACTED] STATINTL			<input type="checkbox"/> PERIODIC <input type="checkbox"/> RESAMPLE <input type="checkbox"/> PREPRODUCTION <input checked="" type="checkbox"/> OTHER (List) Accident Investigation		
PROCUREMENT			BASE		STORAGE
CONTRACTOR			STORAGE TANK NO		QUANTITY REPRESENTED
			N/A		N/A
LOCATION OF FACILITY			QUANTITY OF LAST ADDITION		DATE OF LAST ADDITION
			N/A		N/A
CONTRACT NO			CONTRACT NO		DATE OF LAST PURGING
			N/A		N/A
DATE SAMPLED			SUPPLIER		
			N/A		
SAMPLE NO			BASE SAMPLE NO		DATE SAMPLED
			N/A		N/A
PRESSURE OF SAMPLER SUBMITTED			PRESSURE OF SAMPLER SUBMITTED		
			UNK		
TEST RESULTS					
PURITY % VOLUME	99.65	C2 + HYDROCARBONS (Ethane Equivalent) PPM		0.8	
MOISTURE (mg/liter) or (ppm)	0.001	NITROUS OXIDE PPM		0.0	
ODOR	None	HALOGENATED COMPOUNDS	REFRIGERANTS (Freon etc) PPM	0.0	
CARBON DIOXIDE PPM	0.3		SOLVENTS (Trichloroethylene etc) PPM	0.0	
METHANE PPM	12	OTHER CONSTITUENT (Except Inert Gases) PPM			
ACETYLENE PPM	0.00	TOTAL HYDROCARBONS (By Weight As Carbon) PPM			
ETHYLENE PPM	0.0	PARTICULATE (mg/liter)			
REMARKS					
Material considered satisfactory for use in accordance with Tech. Order 42B6-1-1. Visual Defects of Oxygen Cylinder--None					
APPROVED BY (Signature Date Organization Code)			APPROVED BY (Signature, Date, Organizational Code)		
[REDACTED] 21 Sep 72			Thomas J. O'Shaughnessy Chief, AF Aerospace Fuels Laboratory Directorate of AF Aerospace Fuels		

CRYOGENIC MATERIALS LABORATORY TEST REPORT				ITEM TO BE TESTED (Include Type)	
Approved For Release 2001/11/16 : CIA-RDP74B00836R000300160001-0				Oxygen, Type I	
LAB SAMPLE NO 72-765-0	DATE RECEIVED IN LAB 20 Sep 72	SAMPLER PRESSURE, PSI 0 psi	SAMPLER NO AF237828	SPECIFICATION NO M11-0-27210D	
SUBMITTED BY (Organization, Name, Address, Phone No) [REDACTED]			REASON FOR ANALYSIS OF SAMPLE <input type="checkbox"/> PERIODIC <input type="checkbox"/> RESAMPLE <input type="checkbox"/> PREPRODUCTION <input checked="" type="checkbox"/> OTHER (List) Accident investigation		
STATINTL			Cyl		
PROCUREMENT			BASE		STORAGE
CONTRACTOR			STORAGE TANK NO N/A		QUANTITY REPRESENTED N/A
LOCATION OF FACILITY			QUANTITY OF LAST ADDITION N/A		DATE OF LAST ADDITION N/A
CONTRACT NO			CONTRACT NO N/A		DATE OF LAST PURGING N/A
DATE SAMPLED			SUPPLIER N/A		
SAMPLE NO			BASE SAMPLE NO N/A		DATE SAMPLED N/A
PRESSURE OF SAMPLER SUBMITTED			PRESSURE OF SAMPLER SUBMITTED UNK		
TEST RESULTS					
PURITY % VOLUME	Insufficient sample	C2 + HYDROCARBONS (Ethane Equivalent) PPM		1.8	
MOISTURE (mg/liter) or ppm	Insufficient sample	NITROUS OXIDE PPM		0.0	
ODOR	Insufficient sample	HALOGENATED COMPOUNDS	REFRIGERANTS (Freon etc) PPM	0.0	
CARBON DIOXIDE PPM	355		SOLVENTS (Trichloroethylene etc) PPM	0.0	
METHANE PPM	12	OTHER CONSTITUENT (Except Inert Gases) PPM			
ACETYLENE PPM	0.00	TOTAL HYDROCARBONS (By Weight As Carbon) PPM			
ETHYLENE PPM	0.0	PARTICULATE (mg/liter)			
REMARKS Material considered satisfactory for use in accordance with Tech. Order 42B6-1-1 on parameters tested. Visual Defects of Oxygen cylinder--None					
REPORTED BY (Signature, Date, Organization Code) [REDACTED] 21 Sep 72			APPROVED BY (Signature, Date, Organizational Code) Thomas J. O'Shaughnessy Chief, AF Aerospace Fuels Laboratory Directorate of AF Aerospace Fuels		